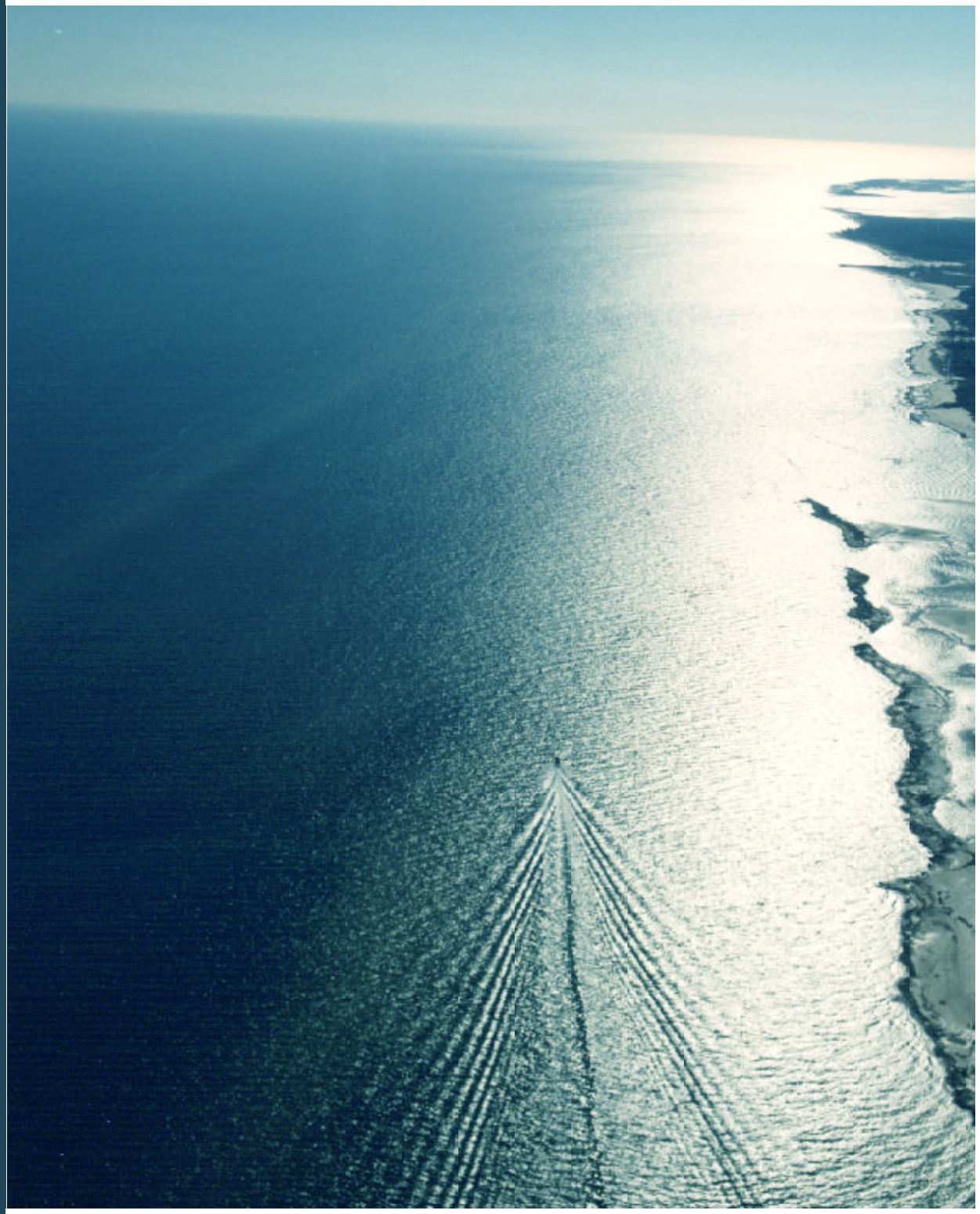
State of Virginia's Coast

2001



Virginia Coastal Program
Department of Environmental Quality
629 East Main Street
Richmond, Virginia 23219

Design and Layout
Ruth Hershner

Cover photograph
Chesapeake Bay and Rigby Island, Mathews County
courtesy of Virginia Institute of Marine Science
Shoreline Studies Program

The river is within us, the sea is all about us;
The sea is the land's edge also, the granite
Into which it reaches, the beaches where it tosses
Its hint of earlier and other creation...

T. S. Eliot

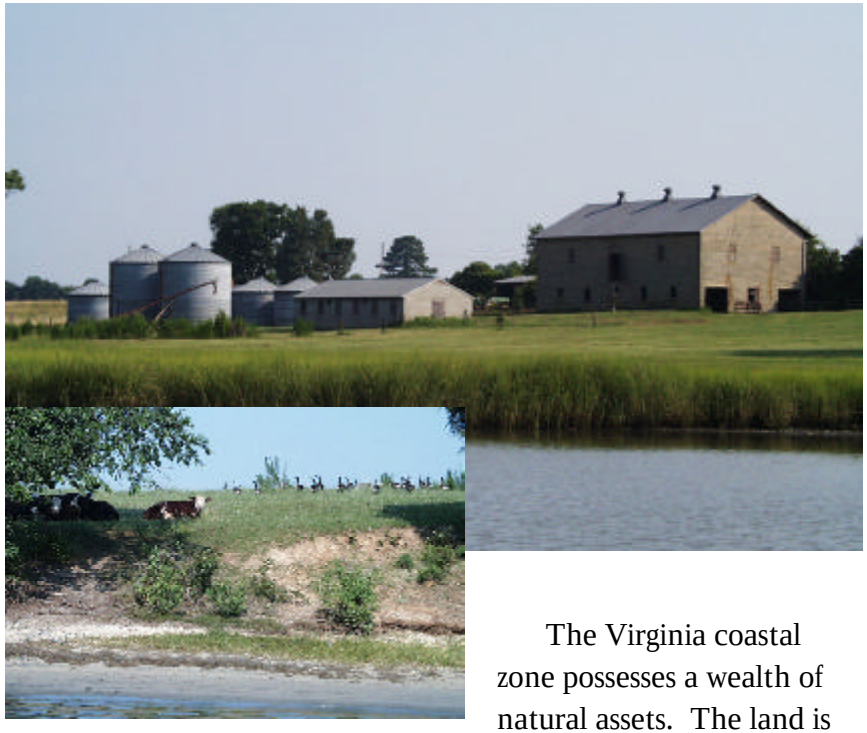
Virginia's coastal zone is the source of so much we value. It is treasured by Virginians and admired by all Americans. From the soaring eagles of the James, and the frolicking river otters of Mobjack Bay, to the famed oysters of the Lynnhaven, and the cherished ponies of Chincoteague... From the impenetrable pocosins and marshes of the Great Dismal Swamp, to the windy wilderness of the Eastern Shore's barrier islands... From strategic military bases like Quantico and Oceana to the NASA Wallops Flight Center... From the recovered colony of Jamestown, to the resort strip of Virginia Beach and the international port of Hampton Roads... Virginia's coastal zone is truly a national treasure. There are so many who use it; so many who need it. We are entrusted to take care of it.

The Virginia Coastal Program is one tool we have to help take care of these coastal resources and it is one way in which the Virginia Department of Environmental Quality (DEQ) fulfills its responsibility to provide comprehensive environmental management and long range planning. Virginia has more than a dozen different agencies and scores of localities responsible for various aspects of managing Virginia's coastal lands and waters. It is DEQ's job to facilitate that management process through the partnership of these entities that together constitute the Virginia Coastal Program.

We hope that this State of the Coast report, prepared for us by the Virginia Institute of Marine Science, will help you to see the big picture of what is happening with Virginia's coastal resources. We thank all of our partners for their help in shaping this report. The report will be updated every biennium in an effort to elucidate trends for specific coastal resources. As the trends are clarified, they will be used to guide the future management and funding priorities of the Virginia Coastal Program.

Robert Burnley
Director
Virginia Department of Environmental Quality

The Virginia State of the Coast Report is a synoptic look at current conditions and uses of natural resources in the coastal zone. There is no definitive means to evaluate the state of such a complex system. In the case of Virginia's coastal zone, the quality of resources and the diversity of uses, combined with an active interest in sustaining its benefits, create an opportunity for growing success in meeting future challenges.



The Virginia coastal zone possesses a wealth of natural assets. The land is fertile, the climate is moderate, the estuaries and coastal ocean are productive, and the setting is a world-class harbor in the middle of one of the world's greatest civilized seacoasts. The coastal zone supports a mix of resource based industries including forestry products, agriculture, mining and commercial fisheries. In addition, natural resources provide the basis for significant and growing recreational activities including hunting, fishing, boating, and bird watching.

The Virginia coastal zone is under stress primarily because it is excellent habitat for humanity. Expanding and shifting human uses of the system have made it very difficult to sustain healthy fisheries, high water quality, and balanced land uses. The diverse economic and social interests of the area create a constant tension in allocation of resources. The search for optimal outcomes will be never-ending in the face of growing populations, evolving technologies, and changing climate.

The future, while uncertain, is brightened by the fact that there has never been a greater collective interest in a positive outcome. The number of interested and informed policy-makers, managers, non-governmental interests, and private citizens continues to grow. While there is still a very great need to add to this group, the products of their interests are already notable. These have included important new regulatory and non-regulatory state programs, collaboration with other jurisdictions outside the coastal zone, and an increasing involvement of local stakeholders in planning watershed management programs.

Given the state of Virginia's coastal zone, sustaining use benefits will require continued and expanded efforts in the future. Effective management of use conflicts will pose one of the greatest challenges. Success in this effort will be central to restoration of viable fisheries and wildlife populations, improvement of water quality, maintenance of resource lands, and preservation of the quality of life for which the area is known.

This report is designed to be part of a continuing series presenting biennial overviews of conditions within Virginia's coastal zone. The information used for this report is only a small part of all the data generated by state agencies regarding natural resources and human activities in the region. The State of Virginia's Coast report presents selected data to show trends or levels that agencies, the General Assembly, and the public frequently use to determine policy and management effectiveness and/or needs.

The Virginia Coastal Program (VCP), led by the Department of Environmental Quality, links activities among many different agencies and localities. The VCP provides a forum for policy coordination and uses federal, state, and local funding to facilitate management in the coastal zone of: wildlife and fisheries; habitats; planning and development; water quality; and public access and information.

Coastal Program Partner Agencies

Chesapeake Bay Local Assistance Department
Department of Conservation and Recreation
Department of Environmental Quality
Department of Game and Inland Fisheries
Department of Health
Virginia Marine Resources Commission
Coastal Localities

Participating Agencies

Department of Agriculture and Consumer Services
Department of Historic Resources
Department of Forestry
Department of Transportation
Economic Development Partnership
Virginia Institute of Marine Science

Virginia's Coastal Zone includes
44 counties and cities and 43 towns.

The Landscape

Defined by the boundaries of counties, cities, and towns adjacent to tidal waters of the Commonwealth, Virginia's coastal zone covers 8,950 square miles (5,727,977 acres), or approximately one quarter of the state. Open waters in the southern half of Chesapeake Bay, and the tidal waters of the James, York and Rappahannock rivers occupy almost 2,400 square miles (1,535,994 acres) of that area. According to recent measurements, the interface between open water and land in the coastal zone extends along more than 10,000 miles of tidal shoreline.

Land in the coastal plain extends from the flat sandy soils of the Eastern Shore and southeastern Virginia, to the gently rolling forests and farmlands of the Peninsula, Middle Peninsula, and Northern Neck. The coastal zone also includes the highly developed lands in the "urban crescent." This arc of development extends from the

metropolitan area around Fairfax, Alexandria, and Arlington, south along the Interstate 95 corridor. It passes through the cities of Fredricksburg, Richmond, and Petersburg, all located along the fall line break between the coastal plain and piedmont regions of the state. The crescent then curves east and south along the Interstate 64 corridor to the port of Hampton Roads and ocean coast at Virginia Beach.

The existence of the "urban crescent" means that a majority of the Commonwealth's population already resides in the coastal zone. The 2000 census suggests that the growth will continue. Between 1990 and 2000 the population in Virginia's coastal localities increased by more than 500,000 people. This accounts for 60% of the population growth in the entire state.

Accommodating additional people in the coastal zone has led to an increase in the conversion of forest and agricultural lands to developed lands. Virginia ranks eleventh in the nation for the rate

of land conversion, with approximately 68,700 acres per year changed from farming and forest to residential and commercial uses. Within Virginia, the coastal zone is the area undergoing the most rapid changes. The National Resource Inventory estimated that developed lands in Virginia's coastal zone grew by 54 percent between 1982 and 1997. This can be compared to a 43 percent statewide rate for the same interval.

Spreading development is often referred to as "sprawl." Virginia's coastal zone has two of the nation's top 20 areas threatened by sprawl. The Washington, D.C. metropolitan area ranks third, and Hampton Roads ranks sixteenth. The Environmental Protection Agency Center for Sustainability identifies the Northern Piedmont of Virginia, the area around Fairfax and Prince William counties, as one of the top 10 farming areas most threatened by sprawl.

Even with relatively high rates of land conversion, more than half of the coastal zone land area remains forested. Approximately one quarter of the land area is used for farming. Of the remaining area, wetlands occupy over 10 percent and about 9 percent is developed.

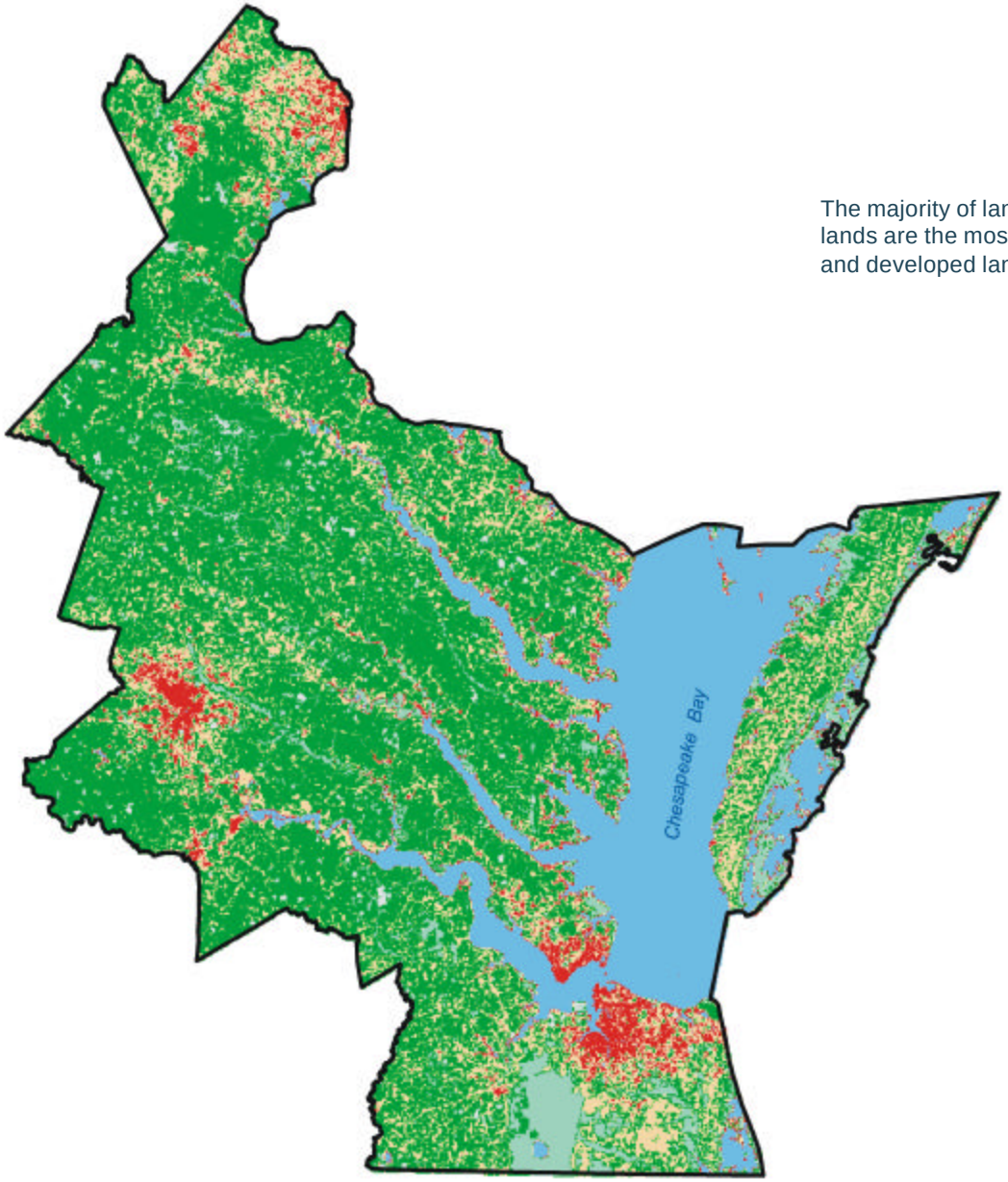
Landuse is not the only factor changing the coastal zone. Climate change is an ongoing process, with or without human impacts. The geography of Virginia provides ample evidence for the rise and fall of sea level over the course of thousands of years. Today, the ocean is again slowly encroaching upon the land. In Virginia, sea level has been rising at about one foot per century, and recent evidence suggests the rate may be accelerating. Changes in sea level are important in Virginia because it can threaten the extensive development that has occurred in the Hampton Roads area. These changes may also result in the potential loss of extensive tidal wetlands and shallow water habitats in the Chesapeake Bay, tributaries and the vast barrier island lagoon system on the seaside of the Eastern Shore.

Wildlife and Fisheries

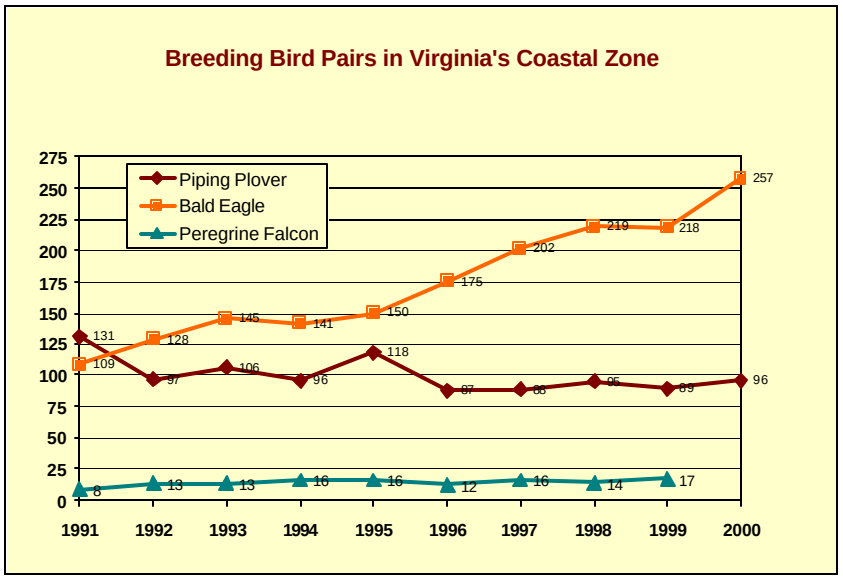
Several thousand fish and wildlife species populate the Virginia coastal zone. The Commonwealth attempts to monitor some of these populations because they are important for commercial or recreational uses. Others are important as indicators of environmental conditions.

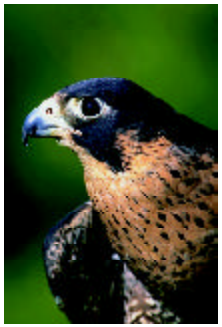
Rare, threatened or endangered plants and animals are also inventoried in the coastal plain as natural heritage resources. This list includes 612 species of mammals, birds, fish, insects and plants. The risks to populations of rare, threatened or endangered species include: direct loss of individuals, for example sea turtle mortalities associated with commercial fishing operations; loss of suitable habitat, tiger beetle populations on beaches are an example of an at-risk group; and competition from non-native species, grass carp and blue catfish are examples of exceptional non-native competitors.

Whether introduced intentionally or accidentally, the growing populations of some non-native plants and animals are a cause for concern. Some of these species are considered invasive, meaning they have the ability to adapt to varied environmental conditions and out-compete native species for limited resources. Virginia is working



The majority of lands in the coastal zone are undeveloped. Forested lands are the most common, followed by agricultural lands. Wetlands and developed lands each occupy about 10 percent of the landscape.



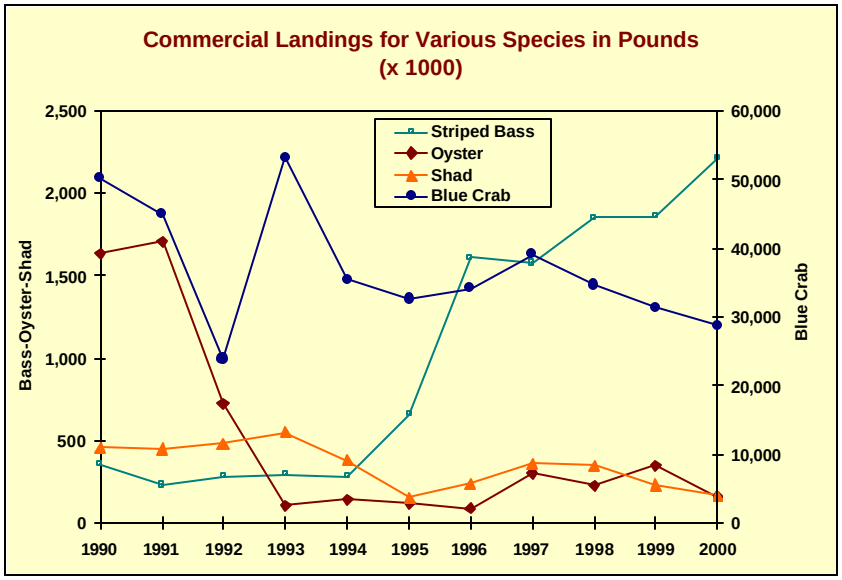


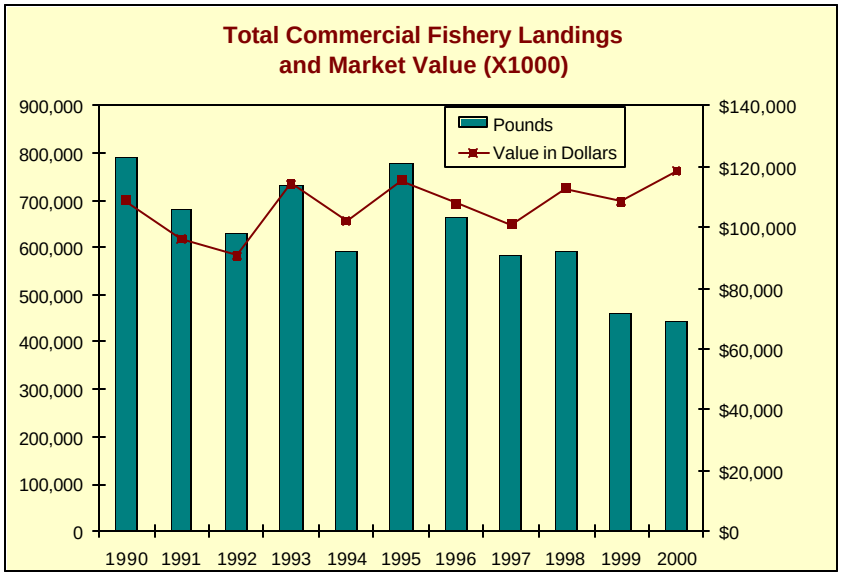
to identify species present in the coastal zone that pose the greatest threats to native communities. For example, the common reed, *Phragmites australis*, and purple loosestrife both threaten native marsh plant communities. The aquatic grass *Hydrilla* can displace other more valuable submerged aquatic vegetation. The Rapa welk is a voracious consumer of valuable shellfish. The zebra mussel can clog pipes and filter out most of the available food in freshwater bodies. Nutria (a small mammal originally imported for fur) can destroy large areas of marsh through feeding and burrowing. Mute swans graze heavily on valuable submerged aquatic vegetation and compete for habitat space with the tundra swan.

Fisheries in Virginia include both traditional commercial harvests, and a growing recreational harvest. In addition to the harvest of wild stocks, there is a steady growth in aquaculture to attempt to meet demand for seafood products through intensive aquaculture practices. The traditional put-and-take oyster culturing has been surpassed by on-bottom hard clam culturing. Off-bottom rack culture for shellfish, and pen or tank culture for finfish are both developing activities in Virginia.

In 2000, the Virginia Marine Resources Commission issued 12,670 commercial licenses for harvesting, landing, buying, and handling seafood. The total number of licenses issued has neither increased nor decreased significantly over the past 20 years. There are, however, changes in license numbers for specific types of gear as watermen move, for example, from clamming to dredging to crab potting depending on population levels of various target species. While the value of commercial landings for individual species has varied from year to year, the total dollar value has remained almost constant over the last 10 years at about $120,000,000.

There were 125,493 saltwater recreational licenses for piers, boats and individuals issued in 2000. In general, the number of saltwater recreational licenses has increased steadily from 105,700 in 1993 (when the license was first required). In 1994, it was estimated that the total expenditures by saltwater recreational fishermen in Virginia was over $300,000,000.





The decline in commercial oyster harvest from a peak of about 4 million bushels in the early 1900's to about 20,000 bushels currently has raised concerns about both the economic and the ecological impacts of a declining population. In 1999, the Virginia Coastal Program created the Virginia Oyster Heritage Program with a primary mission of oyster population recovery. Oyster reefs serve many functions. Oysters improve water quality through their filter feeding, which removes suspended materials from the water column. The reefs improve habitat quality by providing three-dimensional structures that attract other shellfish, finfish, and crustaceans. Finally, the reefs provide a source of oyster spat that can settle on surrounding beds, potentially supporting a sustainable commercial oyster fishery. To date, the Oyster Heritage Program and the Virginia Marine Resources Commission have constructed 33 reefs covering 60 acres. These reefs are nonharvestable sanctuaries spread from the mouth of the Rappahannock River around the lower Bay shoreline to the seaside bays of the Eastern Shore. As many as 15 additional reefs are planned for construction in the near future.

Virginia has a long history of supporting the wild harvest of shellfish by managing subaqueous (underwater) lands that are potential habitat for oysters. Some of the subaqueous bottom is held in common for public shellfish harvesting. These areas, known as Baylor grounds, cover about 250,000 acres. Other potentially suitable subaqueous bottom lands are made available through leases to private individuals for their exclusive use in shellfish culture. At present there are 87,530 acres held in leases.

Aquaculture is a growing industry in the coastal zone. Data from 1998 recorded production of 70,536,000 hard clams with a value of $11,049,000 and 188,000 oysters valued at $57,000. Most of the aquaculture activity in Virginia occurs in the creeks and bays around the southern portion of the Eastern Shore. These areas possess the clean and sheltered waters necessary for the commercial activity to succeed.

There has been an increasing interest among waterfront property owners in use of shellfish to promote water quality. By growing oysters suspended in the water column, private individuals, known as oyster gardeners, are able to increase natural filtration in localized areas. The activity has appealed to many as a personal contribution to the restoration of the Chesapeake Bay, and as a unique learning experience. There are now approximately 2000 people growing an estimated 4 million oysters in 10,000 floats and bags off of backyard piers for this cause.

Virginia's efforts to restore anadromous fish populations for both commercial and recreational uses include harvest restrictions, habitat restoration, and hatchery-based restocking. Harvest restrictions are currently in force for American shad, and have been demonstrated to work in the case of striped bass. Sustaining healthy stocks requires restoration and maintenance of suitable habitat. In the case of anadromous fish—those fish which travel from the sea to fresh water to spawn—one key to habitat restoration is removal of the impediments to fish migration up river.

Artificial oyster reefs constructed by the Oyster Heritage Program.

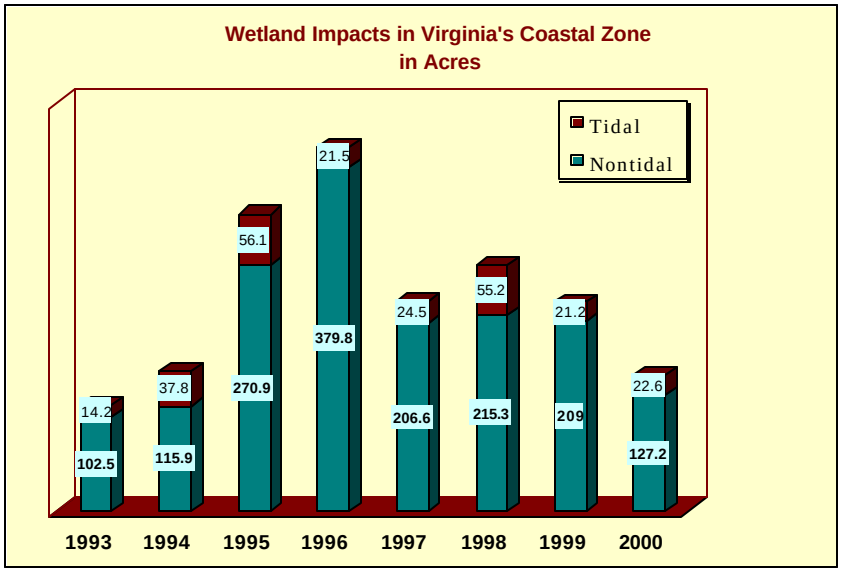
Estimates place the amount of historical anadromous fish habitat blocked by impediments at over 200 miles in the Rappahannock River and 410 miles in the James River and its tributaries. Virginia has committed to reopening about 419 total miles of its rivers through dam removals and fish passage constructions. To date, there have been 190.6 miles of rivers reopened and projects are currently planned on the Appomattox River, Rappahannock River, and South Anna River. Monitoring at Boshers Dam on the James River has documented 22 species of fish using the fishway constructed as part of this restoration effort.

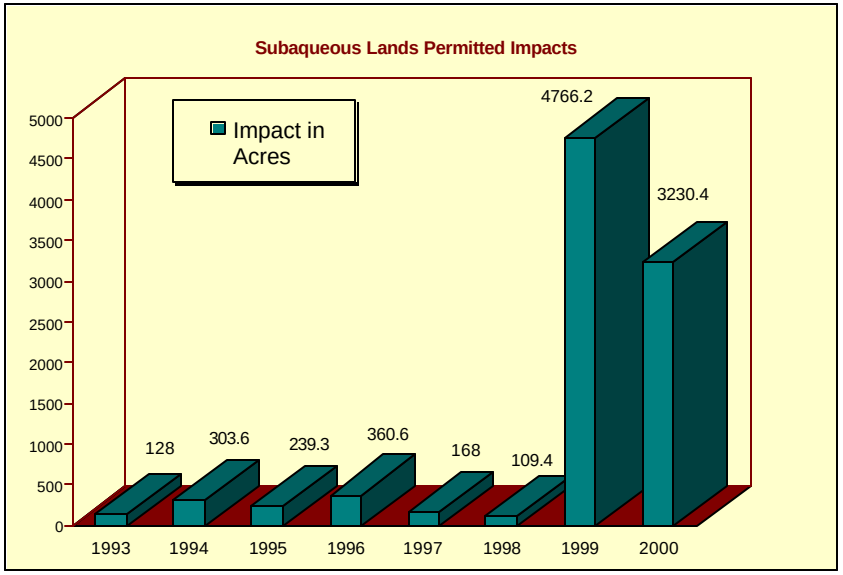
Officials were particularly encouraged to find the primary target species, American shad, among the fish now passing the dam. Hatchery-produced shad are released each year as part of the American shad restoration effort. Officials believe hatchery programs are having positive effects on shad stocks, but there are still too few fish to restore an active fishery.

Habitat

The Virginia coastal zone has at least 78 different kinds of natural communities. The habitat types identified include: upland forests dominated by pine or hardwood; forested wetlands; sandy shorelines with dune grasses; extensive tidal marshes; high eroding bluffs; small sinkhole ponds; and a variety of marine, tidal fresh and freshwater aquatic environments.

The coastal zone contains all 310,813 acres of Virginia's tidal wetlands, and 909,097 acres (approximately 80%) of the state's nontidal wetlands. It has been estimated that over half of Virginia's wetlands have been lost since colonial times. Most of the historic nontidal losses are attributed to agriculture, while most of the historic tidal wetlands losses have been caused by commercial and residential development along the shoreline. Wetlands management programs have slowed the rate of losses considerably. Between 1996 and 2000, approximately 145 acres of tidal wetlands and 1138 acres of nontidal wetlands were impacted in the coastal zone. Nontidal wetland





impacts are now generally a result of commercial and residential development. Tidal wetland impacts are often associated with construction of shoreline erosion protection structures. An estimated 90 miles of shoreline were hardened during the same time interval. Many shoreline projects also impact subaqueous lands. As with tidal wetlands, small incremental impacts on subaqueous lands can cumulatively alter the aquatic environment. Immediate impacts, which may be long term, result from large dredging and shoreline nourishment projects.

Habitats can be protected by restricting development in and around a site, thereby preserving it for the future. There are an estimated 857 square miles (548,183 acres) of preserved lands in Virginia's coastal zone. This constitutes about 9.5% of our coastal land. This protected area includes land that is permanently protected from development with a perpetual easement or fee ownership, held by federal, state or local government or non-profit organizations. This area also includes military lands. While these lands are always available for future military needs, they are considered by Virginia as permanently preserved from development so long as they are so managed.

Virginia is committed to increasing the amount of wetlands in preservation status. The newly formed Governor's Wetland Restoration Coordinating Committee has begun to track wetlands restoration and preservation in the Commonwealth. State parks, natural area preserves, wildlife management areas and unclaimed tidal lands currently offer protection to 34,700 acres of wetlands. An additional 990 acres are to be preserved in 2001, and over 580 acres are in planning or construction for 2001.

Submerged aquatic vegetation (SAV) has been steadily recovering from the dramatic declines of the early 1970's. Efforts to promote the reestablishment of SAV include seeding and transplanting, and intensified management of water quality. At present there are approximately 48,500 acres of SAV in Virginia. Officials hope to promote continued expansion of this resource, and have been en-

couraged by recent successes reintroducing SAV in the seaside bays behind Virginia's barrier islands.

Virginia has coastal dune on about 48 miles of shoreline. An inventory now underway is part of an ongoing Virginia Coastal Program effort to establish a better understanding of dune systems, including primary, secondary, coastal and riverine dunes, in coastal Virginia. The inventory includes where they are located, how they should be defined, and how they function in the natural environment. The goal is improved management to ensure the benefits derived from these naturally occurring and rare systems are maintained.

Forested buffers along the streams and rivers of the Commonwealth provide water quality and habitat benefits for both aquatic and terrestrial biota. Virginia has pledged to restore these valuable riparian buffers throughout the state. At the close of 2000, the restoration effort had placed upwards of 52 linear miles of buffers along coastal river and streams. Virginia's goal is to restore 610 miles by 2010.

Planning and Development

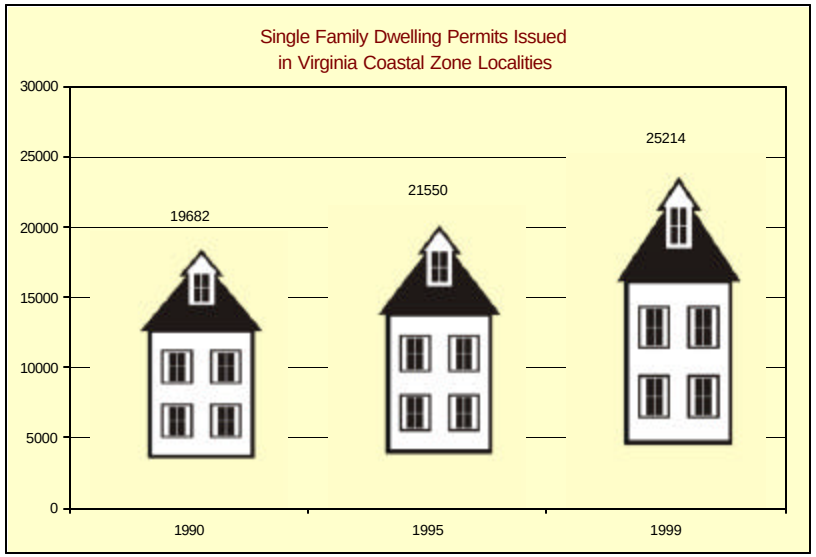
The estimated economic output (the value of goods and services) for Virginia's coastal zone is approaching 271 billion dollars per year. This represents about 71% of the state total. The output is generated by the coastal plain workforce that includes three out of every four working Virginians.

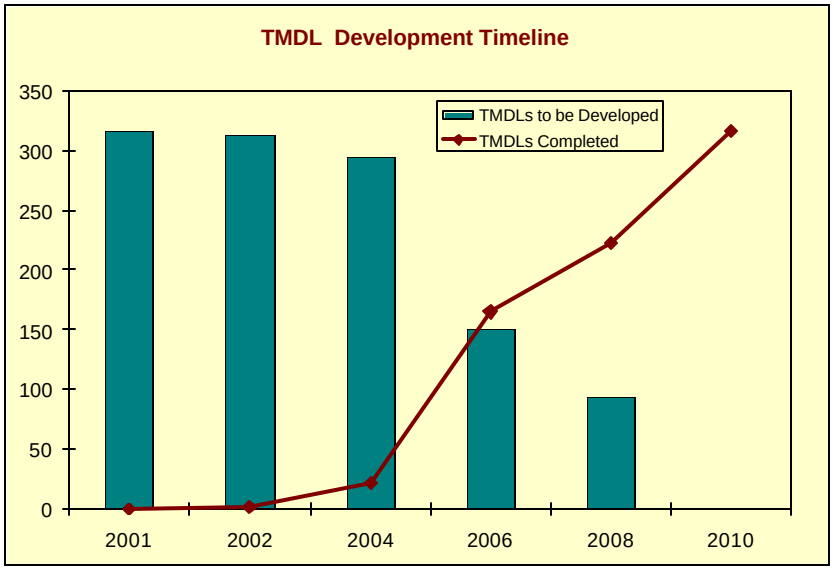
The number of residential dwelling units constructed in coastal localities to house this workforce has been constantly expanding. Single-family dwelling building permits have increased steadily over the past 10 years, with a 22 percent increase in permits issued annually since 1990.

The Port of Hampton Roads is the second largest port on the East Coast. Almost 12 million tons of goods were shipped through the port in 1999. The value of the cargo handled exceeds 37 billion dollars per year. Current expansion projects are expected to double the capacity of the port over the next several years.

Travel and tourism are important parts of the coastal zone economy. Travel expenditures from 1999 indicate that 70% of all travel dollars spent in Virginia were spent in the coastal zone. This amounted to almost 9 billion dollars. The majority of these dollars are spent in Arlington, Alexandria and Virginia Beach.

Development in the coastal zone has brought both economic benefits and environmental impacts. According to the 1999 Toxic Release Inventory (an inventory of toxic compounds released to land, water and air), approximately 42.4 million pounds of inventoried materials were released on-site by facilities within the coastal zone. This represents about 60 percent of the total released statewide. Seven of the ten major generators of toxic releases in Virginia are located in the coastal zone. Of the 37 Virginia sites on the National Priorities list for Superfund (facilities that manufactured, processed, or stored certain hazardous or toxic chemicals), 27 are in the coastal zone.





Total Maximum Daily Load plan development is on a ten year timeline for all of Virginia. For those waterbodies in the coastal zone which require a TMDL, more than half are to be completed by 2006. All the TMDLs are to be completed by 2010.

Water Quality

Water quality parameters are measured at over 4000 stations in Virginia's coastal zone. The monitoring data indicate that 316 coastal water bodies are impaired, meaning they do not meet standards for their designated uses (supporting aquatic life, shellfish harvesting, swimming, or supplying drinking water). Each of these areas will require development and implementation of a Total Maximum Daily Load (TMDL) plan to effect cleanup. A TMDL identifies the total amount of pollutants a waterbody can assimilate and still meet the standards for its designated uses. In the coastal zone, the majority of areas that fail to meet standards are impaired for use as shellfish harvesting waters. There are currently 90,829 acres, or about 142 square miles, of Virginia tidal waters closed to harvesting of shellfish for direct market. Virginia is engaged in an active program to develop TMDLs for all of these areas by 2010. As of Fall 2001, 20 TMDL's had been completed.

All of Virginia tidal waters are open for fishing, although the Commonwealth still maintains a health advisory on consumption of finfish caught in the James River as a result of residual Kepone contamination in sediments.

Much of the effort to improve water quality in the Chesapeake Bay and its tributaries is now focused on nonpoint source pollution. This is contamination carried from land areas directly to surface waters in runoff and groundwater. Nonpoint source pollution is reduced by application of best management practices including erosion and sediment controls, nutrient and pesticide management, and riparian buffer restoration. Virginia has active incentive and regulatory programs focused on implementation of best management practices. The Commonwealth uses water quality monitoring data, land use inventories, animal density data, and other information to assess watersheds for nonpoint source pollution control efforts. At present most of the coastal zone, outside of the undeveloped portions of the upper York River watershed, are ranked as high or medium priorities for nonpoint source pollution control. This reflects the potential for pollution created by development in the "urban crescent" and the prevalence of agricultural nutrient use on the Middle Peninsula, Northern Neck, and Eastern Shore.

Public Access and Information

Virginia's coastal zone has 11 state parks, 13 natural areas, 33 miles of public beaches, 111 public boat ramps, 155 fishing sites, 79 trails, 9 state wildlife management areas, and 6 state forests. There are close to 80,000 acres of local park, recreation and open space lands offering myriad recreational options. There are also 11 National Park sites and 13 federal wildlife refuges.

Of the more than 10,000 miles of tidal shoreline, less than one percent is in public ownership for public use. The 2000 Virginia Outdoors Survey identifies water recreation as the most popular activity and the one with the greatest demand for additional access.

Virginia has over 240,000 registered boats. Boat-related activities such as fishing, sailing, and water-skiing, generated more than 15 million activity-days in the coastal zone. Fishing is one of the most popular pursuits in the coastal zone, and artificial reefs attract both fish and fishermen. There are currently 5 reefs in the Atlantic Ocean and 13 in the Chesapeake Bay. Two more reefs are planned for the Chesapeake Bay waters.

The Virginia Birding and Wildlife Trail is a new addition to the recreational opportunities in the Commonwealth. It will address demands for opportunities to engage in one of the fastest growing recreational activities in the country, observation of birds and wildlife in their natural habitats. The trail will be a driving trail linking parks, refugees and specially selected private lands. Intended to eventually cover the entire state, planning for the coastal portion of the trail is already well underway.

Virginia is already renown for its land-based historical resources. The Commonwealth is also cataloguing nautical archeology sites. Including military shipwrecks, forts, and historic commerce sites, there are 283 currently identified locations.

In January 2000, Governor Gilmore launched a statewide environmental education initiative, *Virginia Naturally*. This program is designed to link Virginians with opportunities for lifelong learning and environmental stewardship. There are over 270 partner organizations with representatives of local, state, and federal agencies, businesses and community groups. To sustain the early success of Virginia Naturally, the Commonwealth created the Virginia Office of Environmental Education in the Department of Environmental Quality. Information on the program is available on the DEQ website. Over 500 environmental education opportunities can also be found on the DEQ website.

Looking to the Future

Virginia's coastal zone has been an agreeable habitat for humanity for centuries. The wealth of natural resources creates a wide diversity of opportunities to pursue business and recreation. The attractiveness of the region has brought with it the challenges of supporting an ever expanding human population. The Commonwealth and its citizens have come to understand the importance of dealing directly with the emerging threats to both quantity and quality of valuable coastal zone resources.

Today Virginia is confronted with problems of accommodating expanding development, while preserving forests, farms and open spaces. It must find ways to manage the point and nonpoint source pollution that impacts water quality and stresses fishery resources. Past actions that have impacted critical habitats, reduced important commercial resources, and limited future use opportunities must be mitigated. New opportunities for business and recreation must be developed, and a sense of stewardship must be cultivated.

While all of these challenges remain, Virginia and its citizens are currently more involved in seeking solutions than at any time in the past. The state has established numerous programs and made multiple commitments to manage and restore the coastal environment. The biggest challenge confronting state government is the continuing search for the means to implement its intentions. One of the most significant assets in this struggle is the growing number of informed and motivated citizens groups focused on maintaining and improving the quality of their environment. The engagement of these groups is critical to both the establishment and the achievement of goals for the future state of the coastal zone.

Coastal Program Partners

State Agencies
Chesapeake Bay Local Assistance Department
Department of Conservation and Recreation
Department of Environmental Quality
Department of Game and Inland Fisheries
Department of Health
Virginia Marine Resources Commission
Department of Agriculture and Consumer Affairs
Department of Historic Resources
Department of Forestry
Department of Transportation
Economic Development Partnership
Virginia Institute of Marine Science

Tidewater Planning District Commissions
Accomack-Northampton Planning District Commission
Crater Planning District Commission
Hampton Roads Planning District Commission
Middle Peninsula Planning District Commission
Northern Virginia Planning District Commission
Northern Neck Planning District Commission
Rappahannock Area District Commission
Richmond Regional Planning District Commission

Tidewater Cities, Counties and Towns

Virginia Department of Environmental Quality

Robert Burnley
Director
Department of Environmental Quality
(804) 698-4020
bgburnley@deq.state.va.us

Michael Murphy
Director
Division of Environmental Enhancement
(804) 698-4003
mpmurphy@deq.state.va.us

Office of the Virginia Coastal Program

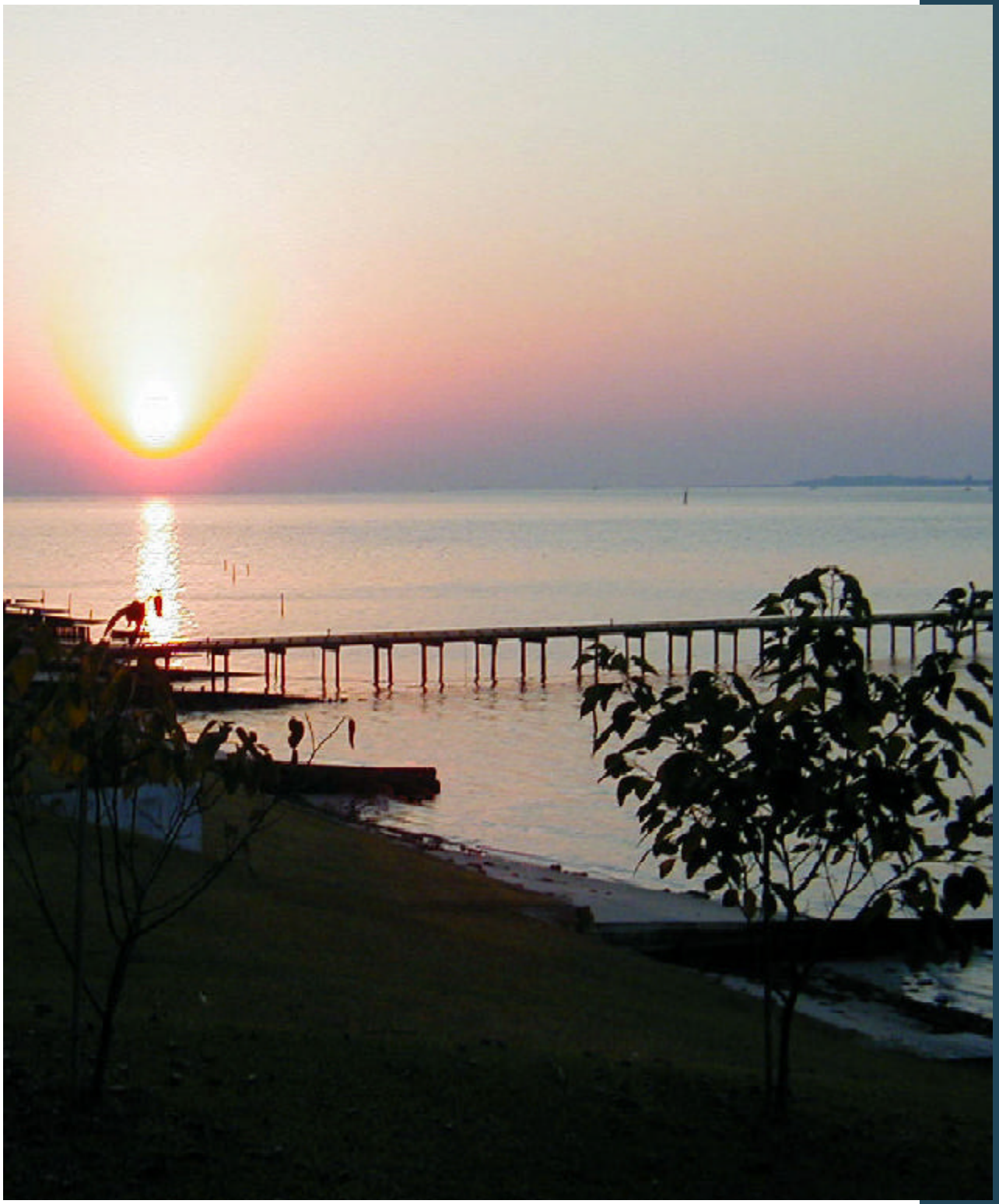
Laura McKay
Virginia Coastal Program Manager
(804) 698-4323
lbmckay@deq.state.va.us

Julie Bixby
Coastal Planner
(804) 698-4333
jabixby@deq.state.va.us

Virginia Witmer
Outreach Coordinator
(804) 698-4320
vgwitmer@deq.state.va.us

Kendell Jenkins
Coastal Specialist
(804) 698-4537
kdjenkins@deq.state.va.us

Diane Barns
Coastal Program Assistant
(804) 698-4051
dcbarns@deq.state.va.us



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DEQ
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